

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**

Order Instituting Rulemaking Pursuant to
Assembly Bill 2514 to Consider the Adoption of
Procurement Targets for Viable and Cost-
Effective Energy Storage Systems.

Rulemaking 10-12-007
(Filed December 16, 2010)

**REPLY COMMENTS OF DUKE ENERGY CORPORATION
ON THE ASSIGNED COMMISSIONER RULING PROPOSING STORAGE
PROCUREMENT TARGETS AND MECHANISMS**

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I. INTRODUCTION

Duke Energy Corporation (Duke) submits the following reply comments pursuant to the schedule set forth in June 10, 2013 Assigned Commissioner ruling Proposing Storage Procurement Targets and Mechanisms (ACR). Duke's motion to become a party to this proceeding was granted July 1, 2013.

Duke develops and owns energy storage projects throughout the United States. Most recently, Duke completed a 36 megawatt (MW) battery storage project at its 153 MW Notrees wind farm in Texas. That storage facility is currently the largest battery storage project (in North America) that is integrated with a renewable energy facility. In addition to several previous pilot projects, in 2012 Duke implemented three energy storage systems as part of the Electric Power Research Institute's Smart Grid Demonstration, including a 402 kilowatt battery system at the Rankin Substation in Mount Holly, North Carolina, to smooth fluctuation in generation from a nearby 1.2 MW solar facility. Duke currently has a large pipeline of energy storage projects in active development, including in California.

Duke has a significant interest in this proceeding as a result of its efforts to develop energy storage, and believes that viable and cost-effective storage should be part of the solution to California's energy needs. Duke believes that the ACR takes the right approach by suggesting

that the Commission adopt procurement targets for each investor-owned utility (IOU), creating market opportunities that will reduce market barriers and allow energy storage to become a key operational component of California's energy resources.

Duke submits these reply comments concerning some of the modifications to the ACR suggested by a number of parties in their opening comments.

II. SUGGESTED REVISIONS TO PROPOSAL

A. Procurement Mechanisms

Party comments on the ACR have almost universally suggested that the proposed reverse auction mechanism (RAM) would not be workable in the context of diverse storage resources that have a wide variety of characteristics and potential benefits. Duke agrees with that conclusion. Instead, Duke suggests that the IOUs be required to engage in either annual or biannual competitive Requests for Offers (RFOs) for storage capacity.

As the ACR notes, the storage procurement targets are not and should not be tied at this point to any need determination in the Long Term Procurement Plan (LTPP) proceeding. ACR at 14-15. Duke agrees with the Independent Energy Producers' (IEP) suggestion that only once a storage resource is contractually committed to a specific commercial operation date should it be included in the resource assumptions underlying the LTPP and resource adequacy assessments of future resource needs.

While CEERT also disagrees with the use of a RAM, it proposes that the Commission use all source solicitations, to allow generation and storage to compete in order to determine the most cost-effective solution to any need. However, both CEERT and Green Power Institute (GPI) make the point that "storage is fundamentally different from generation..." GPI Opening Comments at 1. As the ACR makes clear, storage can not only provide various attributes traditionally procured from generation, it can also provide other benefits such as transmission upgrade deferrals, transmission congestion relief and other benefits that might traditionally been provided by transmission and distribution projects. Given the wide diversity of benefits provided by storage, as compared to generation, an all source RFO is problematic. At least for the short

term, storage, due to its fundamental differences, should be procured through a separate procurement process specifically for storage. It may be that the lessons learned through that process will allow for the increasing use of all source RFOs, rather than targeted procurement, but that point has not yet been reached.

B. Installation Targets

Although Duke supports the establishment of procurement targets, it agrees with the comments of the California Energy Storage Alliance (CESA) and others that the Commission should consider employing some mechanism to ensure that storage is not only procured, but actually installed. Assembly Bill (AB) 2514 mandates that the Commission consider requiring the procurement of storage that is both cost-effective and viable. By imposing not only a procurement obligation, but also an installation obligation, the Commission will provide the investor-owned utilities (IOUs) with the incentive to procure viable energy storage, rather than merely procuring the least expensive. As experience with the RPS program has shown, there is a risk that the least expensive bids may not be viable.

C. Cost-Effectiveness Review

The ACR would allow each IOU to “be relieved from a declining percentage of its procurement targets with an affirmative showing of unreasonableness of cost, such as offers that are evaluated as cost-ineffective based on the IOU’s proposed methodology, the lack of a competitive number of bids in the energy storage auction, or other showing.” ACR at 19. In its Opening Comments CEERT asserts that this “puts the cart before the horse,” and argues that “no procurement targets should be set until energy storage technology eligibility and cost effectiveness have been determined.” CEERT Opening Comments at 4, 6. In a similar vein, IEP argues that procurement targets should be adjusted based upon the success, or lack thereof, of the prior solicitation.

Duke disagrees. As the ACR notes, the procurement targets are intended to support emerging uses of storage technologies, allowing the collection of operational data. In turn, “[a]s more information is gained through deployment of storage projects and applications, more

refinements and better analysis of cost-effectiveness will become possible....” ACR at 14. In particular, it is imperative that the right metrics are used to determine cost effectiveness. As noted earlier, storage has unique characteristics, and can be much more flexible than conventional generation, and so it is important to fully capture these benefits through the use of the proper metrics and analytical framework. Further, the procurement targets will create market opportunities that will allow further technological and other innovations that will put downward pressure on the cost of storage. But these advances will only occur with imposition of procurement targets, requiring IOUs to take steps to procure additional storage.

In contrast, wasting critical time attempting to further refine cost-effectiveness models, without proceeding to collect real-world data, will not advance the ball, and runs the risk that the Commission will miss an important opportunity to increase the diversity and cost-effectiveness of California's energy resources. California has a unique opportunity, with the retirement of once-through cooling (OTC) generation units pursuant to the California State Water Resources Control Board's OTC policy, and the unexpected retirement of the San Onofre Nuclear Generating Station (SONGS), to explore how storage might address the needs created by these retirements.

The Commission recently participated in a Joint Workshop on Electricity Infrastructure Issues Resulting from the SONGS Closure, on July 15 in Los Angeles. During that workshop, a variety of solutions to those infrastructure issues were discussed, including both generation and transmission options. However, either one of those options requires a considerable amount of time to permit and construct. Repowering existing OTC generation in the basin is projected to take at least seven years. In contrast, as Duke noted in oral comments at that workshop, storage can be permitted and constructed in a far shorter timeframe, and can provide attributes traditionally supplied by both transmission and generation. Given the short timeline available to address SONGS and OTC issues, and the potential advantages that storage provides over both generation and transmission, or as part of a generation and/or transmission solution, the

